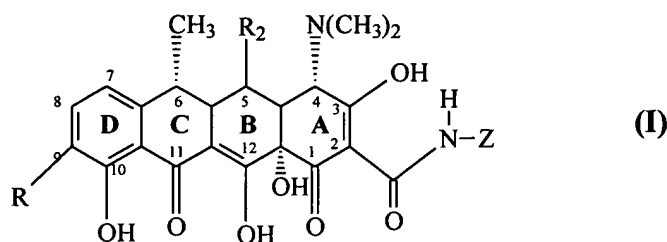


**Amendment to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1. (Original) A 5,9-substituted tetracycline.
2. (Original) A compound of claim 1 of the following Formula I:



wherein R is alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an aryalkyl;

R<sup>2</sup> is alkanoyl; aroyl; alkaroyl; carbocyclic aryl, heteroaromatic, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an aryalkyl;

Z is hydrogen, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; aryalkyl, carbocyclic aryl, heteroalicyclic or heteroaromatic group; and pharmaceutically acceptable salts thereof.

3. (Original) A compound of claim 1 that is  
5-propionate-9-t-butyl doxycycline;  
9-chloro-t-butyl-5-propionate doxycycline;  
9-t-butyl-6- $\alpha$ -deoxy-5-oxy-tetracycline;  
9-t-butyl-5-oxytetracycline;  
9-t-butyl-6- $\alpha$ -deoxy-5-formyloxy-tetracycline;  
9-t-butyl-6- $\alpha$ -deoxy-5-acetoxy-tetracycline;  
9-t-butyl-6- $\alpha$ -deoxy-5-propionyloxy-tetracycline;  
9-t-butyl-6- $\alpha$ -deoxy-5-phenylcarbonyloxy-tetracycline;  
9-t-butyl-6- $\alpha$ -deoxy-5-benzylcarbonyloxy-tetracycline;  
9-t-butyl-6- $\alpha$ -deoxy-5-dimethylaminocarbonyloxy-tetracycline;  
9-t-butyl-6- $\alpha$ -deoxy-5-cyclopentylcarbonyloxy-tetracycline;

9-t-butyl-6-alpha-deoxy-5-cyclobutylcarbonyloxy-tetracycline;  
9-t-butyl-6-alpha-deoxy-5-cyclohexylcarbonyloxy-tetracycline;  
9-t-butyl-6-alpha-deoxy-5-cycloheptylcarbonyloxy-tetracycline;  
9-(chloro-t-butyl)-6-alpha-deoxy-5-oxy-tetracycline;  
9-[(dimethylamino)-t-butyl]-6-alpha-deoxy-5-oxy-tetracycline;  
9-(amino)-t-butyl-6-alpha-deoxy-5-oxy-tetracycline;  
9-[(piperidino)-t-butyl]-6-alpha-deoxy-5-oxy-tetracycline;  
9-[(diethylamino)-t-butyl]-6-alpha-deoxy-5-oxy-tetracycline;  
9-[(dipropylamino)-t-butyl]-6-alpha-deoxy-5-oxy-tetracycline;  
9-[(dimethylamino)-t-butyl]-6-alpha-deoxy-5-formyloxy-tetracycline;  
9-[(dimethylamino)-t-butyl]-6-alpha-deoxy-5-acetoxy-tetracycline;  
9-[(dimethylamino)-t-butyl]-6-alpha-deoxy-5-propionylcarbonyloxy-tetracycline;  
9-[(dimethylamino)-t-butyl]-6-alpha-deoxy-5-phenylcarbonyloxy-tetracycline;  
9-[(dimethylamino)-t-butyl]-6-alpha-deoxy-5-benzylcarbonyloxy-tetracycline;  
9-[(dimethylamino)-t-butyl]-6-alpha-deoxy-5-dimethylaminocarbonyloxy-tetracycline;  
9-[(dimethylamino)-t-butyl]-6-alpha-deoxy-5-cyclopentylcarbonyloxy-tetracycline;  
9-[(dimethylamino)-t-butyl]-6-alpha-deoxy-5-cyclobutylcarbonyloxy-tetracycline;  
9-[(dimethylamino)-t-butyl]-6-alpha-deoxy-5-cyclohexylcarbonyloxy-tetracycline; or 9-[(dimethylamino)-t-butyl]-6-alpha-deoxy-5-cycloheptylcarbonyloxy-tetracycline; and pharmaceutically acceptable salts thereof.

4. (Original) The compound of claim 2 wherein R is alkyl having 1 to about 20 carbon atoms; alkenyl having 2 to about 20 carbon atoms; alkynyl having 2 to about 20 carbon atoms; alkoxy having 1 to about 20 carbon atoms; alkylthio having 1 to about 20 carbon atoms; alkylsulfinyl having from 1 to about 20 carbon atoms; alkylsulfonyl having from 1 to about 20 carbon atoms; alkylamino having from 1 to about 20 carbon atoms; or aryalkyl;

R<sup>2</sup> is alkyl having 1 to about 20 carbon atoms; alkenyl having 2 to about 20 carbon atoms; alkynyl 2 to about 20 carbon atoms; alkoxy 1 to about 20 carbon atoms; alkylthio having 1 to about 20 carbon atoms; alkylsulfinyl having from 1 to about 20 carbon atoms; alkylsulfonyl having from 1 to about 20 carbon atoms; alkylamino having from 1 to about 20 carbon atoms; or aryalkyl; alkanoyl from 1 to about 20 carbon atoms; aroyl; alkaroyl; carbocyclic aryl, heteroaromatic; and

Z is hydrogen, alkyl having 1 to about 20 carbon atoms; alkenyl having 2 to about 20 carbon atoms; alkynyl having 2 to about 20 carbon atoms; alkoxy having 1 to about 20 carbon atoms; alkylthio having 1 to about 20 carbon atoms; alkylsulfinyl having from 1 to about 20 carbon atoms; alkylsulfonyl having from 1 to about 20 carbon atoms; alkylamino having from 1 to about 20 carbon atoms; aryalkyl; carbocyclic aryl, or an heteroalicyclic group.

5. (Original) The compound of claim 2 wherein R is alkyl having 1 to about 12 carbon atoms; alkenyl having 2 to 12 about carbon atoms; alkynyl having 2 to 12 about carbon atoms; alkoxy having 1 to about 12 carbon atoms; alkylthio having 1 to about 12 carbon atoms; alkylsulfinyl having 1 to about 12 carbon atoms; alkylsulfonyl having 1 to about 12 carbon atoms; alkylamino having 1 to about 12 carbon atoms; or benzyl;

R<sup>2</sup> is alkyl having 1 to about 12 carbon atoms; alkenyl having 2 to 12 about carbon atoms; alkynyl having 2 to 12 about carbon atoms; alkoxy having 1 to about 12 carbon atoms; alkylthio having 1 to about 12 carbon atoms; alkylsulfinyl having 1 to about 12 carbon atoms; alkylsulfonyl having 1 to about 12 carbon atoms; alkylamino having 1 to about 12 carbon atoms; benzyl; aroyl; alkaroyl; carbocyclic aryl, heteroaromatic; and Z is hydrogen.

6. (Original) The compound of claim 2 wherein R and/or R<sup>2</sup> is selected from the group consisting of t-butyl; chloro-t-butyl; (dimethylamino)-t-butyl; propionate; piperidinoethyl; formyloxy; acetoxy; propionyloxy; phenylcarbonyloxy; benzylcarbonyloxy; piperidino; amino; diethylamino; dipropylamino; acetylcarbonyloxy; propionylcarbonyloxy; phenylcarbonyloxy; benzylcarbonyloxy; dimethylaminocarbonyloxy; cyclopentylcarbonyloxy; cyclobutylcarbonyloxy; cyclohexylcarbonyloxy; cycloheptylcarbonyloxy; and Z is hydrogen.

7. (Original) The compound of claim 1, wherein said compound is selected from the group consisting of 5-propionate-9-t-butyl doxycycline; 9-t-butyl-6-deoxy-5-propionylcarbonyloxytetracycline, 9-t-butyl-6-deoxy-5-acetylcarbonyloxytetracycline, 9-t-butyl-6-deoxy-5-cyclobutylcarbonyloxytetracycline, and pharmaceutically acceptable salts thereof.

Claims 8-28. (Cancelled)

29. (Original) A pharmaceutical composition of claim 1.

30. (New) A compound of claim 1, wherein said compound is:

